YUAN "CHARLES" CUI

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digital-flaneur.github.io

EDUCATION

Northwestern University   Evanston, IL

Ph.D., Computer Science   2020 - Present
  Advisor: Matthew Kay
Master's, Computer Science   2023
  Advisor: Matthew Kay

Oberlin College   Oberlin, OH

B.A., Mathematics, Computer Science   2016 - 2020

Budapest Semesters in Mathematics   Budapest, Hungary

Study Abroad   2019

PUBLICATIONS

Promises and Pitfalls: Using Large Language Models to Generate Visualization Items. <u>Yuan Cui</u>, Lily W. Ge, Yiren Ding, Lane Harrison, Fumeng Yang, Matthew Kay. *IEEE VIS* 2024.

Odds and Insights: Decision Quality in Exploratory Data Analysis Under Uncertainty. Abhraneel Sarma, Xiaoying Pu, <u>Yuan Cui</u>, Eli T Brown, Michael Correll, Matthew Kay. *ACM CHI* 2024. (Best Paper Honorable Mention)

Adaptive Assessment of Visualization Literacy. <u>Yuan Cui</u>, Lily W. Ge, Yiren Ding, Fumeng Yang, Lane Harrison, Matthew Kay. *IEEE VIS* 2023.

CALVI: Critical Thinking Assessment for Literacy in Visualizations. Lily W. Ge, <u>Yuan Cui</u>, Matthew Kay. *ACM CHI* 2023. (Best Paper Honorable Mention)

Can an Algorithm be My Healthcare Proxy?. Duncan McElfresh, Samuel Dooley, <u>Yuan Cui</u>, Kendra Griesman, Weiqin Wang, Tyler Will, Neil Sehgal, and John Dickerson. *Explainable AI in Healthcare and Medicine* 2021.

PROFESSIONAL EXPERIENCE

Max Planck Institute for Demographic Research   Rostock, Germany

Social Data Science Researcher   06/2024 - 08/2024
  Built statistical models to estimate age-specific mortality at the national and subnational levels in a data
  scare context.

RegLab @ Stanford Law School   Stanford, CA

Graduate Fellow   06/2023 - 08/2023
  Designed statistical sampling techniques to estimate racial disparity when data is scarce, and established
  performance guarantees with mathematical proofs. Built simulations and estimated health disparity in
  a dataset containing ~7M Americans' healthcare records.

Carnegie Mellon University & Data Science for Social Good Foundation   Pittsburgh, PA

Data Science Fellow   05/2022 - 08/2022
  Built a machine learning system to improve the routing of the 988 Suicide & Crisis Lifeline which
  serves 2,000,000+ callers per year. Obtained preliminary results that showed the new system could
  help ~20,000 additional callers each year.

University of Chicago Consortium on School Research   Hyde Park, IL
Research Intern   03/2022 - 05/2022

  Conducted clustering analysis on Chicago Public Schools data to predict students' graduation rate.

HomeRiser, Inc   Remote
Co-founder, Head of Data Science   01/2021 - 10/2021

  Co-founded a real estate technology start-up to provide more flexible and affordable ways to finance
  people's home ownership. Developed a financial model in Python that simulated cash flow and gener-
  ated a detailed profit and loss statement.

University of Maryland | REU - Combinatorics and Algorithms for Real Problems   College Park, MD
Undergraduate Researcher   05/2019 - 08/2019

  Developed a machine learning model for advance healthcare directives. Deployed active learning algo-
  rithms to dynamically select survey questions based on patients' previous responses. Built a website to
  collect data. Coauthored a paper, which was accepted to the *Explainable AI in Healthcare and Medicine.*

Oberlin College Computer Science Department   Oberlin, OH
Undergraduate Researcher   06/2018 - 08/2018

  Analyzed a repeated pricing game between a buyer and seller in the presence of privacy and the absence
  of commitment power. Conducted numerical experiments and solved for equilibrium in the game. For-
  malized results about the effect of privacy in our repeated sales setting.

PRESENTATIONS, WORKSHOPS, TUTORIALS

Presentations

Max Planck Institute for Demographic Research. *"A Fast and Furious Introduction to Computer Science."*
Jul 2024, Rostock, Germany.

IEEE VIS. *"Adaptive Assessment of Visualization Literacy."* Oct 2023, Melbourne, Australia.

Data for Good. *"Improving the 988 Suicide & Crisis Lifeline's Service Through Better Call Routing."* Sept
2022, Seattle, WA. Joint with Irene Tang.

Tutorials

Max Planck Institute for Demographic Research. *"Building an Academic Website and Hosting on Github."*
Jul 2024, Rostock, Germany.

ACM FAccT. *"Data Externalities."* Mar 2021, Remote. Joint with Rediet Abebe, Mihaela Curmei,
Andreas Haupt, and Yixin Wang.

Workshops

ACM CHI. *"Toward a More Comprehensive Understanding of Visualization Literacy."* May 2024,
Honolulu, HI. Joint with Lily W. Ge, Maryam Hedayati, Yiren Ding, Karen Bonilla, Alark Joshi, Alvitta
Ottley, Benjamin Bach, Bum Chul Kwon, David N. Rapp, Evan Peck, Lace M. Padilla, Michael Correll,
Michelle A. Borkin, Lane Harrison, Matthew Kay.

HONORS AND AWARDS

NICO Intersection Science Fellowship, Northwestern University 2024
HCI + Design Cluster Fellowship, Northwestern University 2022
Phi Beta Kappa, Oberlin College 2020
Elbridge P. Vance Scholar of Mathematics, Oberlin College 2016 - 2020

PROFESSIONAL SERVICE

The Journal of Visualization and Interaction
Open Practices Chair   2024 - present

EAAMO Bridges (formerly MD4SG)
Co-Director   2022 - present
Co-Lead of the Data Economies Working Group   2021
Membership Manager   2021

Conference Reviewer
IEEE VIS   2024
ACM CHI   2024

Conference Volunteer
ACM STOC   2021
ACM EC   2020

TEACHING EXPERIENCE

Teaching Assistant

Northwestern University   Evanston, IL
Computer Science Department   2021-2024

Design & Analysis of Algorithms, Mathematical Foundations of Computer Science (2x)

Oberlin College   Oberlin, OH
Mathematics Department   2017-2020

Linear Algebra (2x), Discrete Mathematics (2x), Calculus II, Calculus I

Economics Department   2019

Principles of Finance

Computer Science Department   2017

Introduction to Computer Science